

**What Is Claimed Is:**

1. Apparatus for stabilizing the voltage of an AC generator, said generator having a rotor which turns at variable speeds, said apparatus comprising: a rotor with a coil on at least two distinctive poles and a stator with a coil, where the self-magnetizing current of the rotor is controlled via an electronic circuit which is dependent on the voltage generated by the AC generator, characterized in that the self-magnetizing current of the rotor is controlled by a co-rotating electronic system where the control pulses from a high-frequency pulse generator are transmitted, without the use of electrical contacts, to the co-rotating electronic system.

2. An AC generator in accordance with claim 1, wherein the co-rotating electronic system activates an electronic switch that also co-rotates and implements the incoming control pulses of a stationary high-frequency pulse generator into interruptions in the self-magnetizing current of the rotor.

3. An AC generator in accordance with claim 1, wherein the non-contact transmission of the high-frequency pulses to the rotating control system is inductive, comprising a transformer having a the rotating magnetic core with a coil and a stationary magnetic core with a coil, where an air gap is provided between the magnetic cores to allow a non-contacting rotation of the magnetic cores and relative to each other.

4. An AC generator in accordance with claim 1, wherein the high-frequency pulse generator comprises a comparator that turns the high-frequency pulse generator on and off in dependence of the voltage generated by the AC generator so as to transmit the control pulses without contact as pulse packages via a transformer with the separated magnetic cores.

5. An AC generator in accordance with claim 1, wherein the comparator determines when the high-frequency pulse generator is turned on and off and an additional control system is provided in the high-frequency pulse generator which alters the duration of the pulse packages in dependence of the frequency of the AC generator.

6. An AC generator in accordance with claim 1, wherein the control elements in the co-rotating electronic circuit alter the duration of the current flow in the electronic switch depending on the duration of the pulse packages.

7. The method of stabilizing the output voltage of an AC generator employing the apparatus of claim 1.